NavMed 369

RESTRICTED

NAVY DEPARTMENT

BUMED NEWS LETTER

a digest of timely information

Editor - Captain F. W. Farrar. (MC). U.S.N.

Vol. 7 Friday, January 18, 1946 No. 2

TABLE OF CONTENTS

* * * * * *

(Not Restricted)

Additional Studies on Lichenoid Dermatitis Caused by Atabrine Administration: A discussion of a lichenoid dermatitis caused by administration of atabrine appeared in the Bumed News Letter of September 28, 1945. It was noted in this article that studies by Commander A. A. Bianco, (MC), USNR, and associates at the Naval Hospital, Bethesda, Maryland, clearly demonstrated that chronic and healed cases of the dermatitis could be reactivated by administration of small doses of atabrine. Since that time, this condition has received much additional study. It has been definitely ascertained that it is not of

(Not Restricted)

military importance because of very low incidence, and with the close of the war and the cessation of suppressive atabrine therapy among Navy personnel it will become, in time, a negligible factor in this service.

Considerable differences of opinion have existed, however, in regard to the causation and general characteristics of the dermatitis. Much significant information regarding these points is available in a final report covering the extensive studies carried out at the Naval Hospital, Bethesda, Maryland, by Commander A. A. Bianco and Lieutenant Commander G. M. Saunders. Because of the wide general interest in this disorder and the continuing importance of prompt diagnosis and proper management of existing cases, the salient features of this report are summarized in the following paragraphs:

Of 53 individuals sent to Bethesda for study, 38 were considered to be cases of genuine atabrine skin sensitivity. All of this group had been on suppressive atabrine (0.6 - 0.7 Gm. weekly) in the Pacific. One of the group was a Negro.

(a) The duration of suppressive therapy before the appearance of lesions varied from two weeks to sixteen months with an average period of four months.
(b) In 53 per cent of the cases spread from the initial lesion to complete involvement of the body occurred in two weeks. Spread in the remaining cases was slower. All cases began improving in about six weeks following termination of atabrine administration, regardless of geographic locality.
(c) There were no systemic complaints among the patients, and all were hospitalized because of the skin lesions.
(d) None of the cases had a history or symptoms suggesting a previous allergic skin sensitivity.
(e) The group appeared to fall within an older age bracket, the average patient age being 33 years.

Incident to the suggestion by Livingood that a preceding contact dermatitis caused by certain Pacific vegetation predisposed to the dermatitis, a study was made of the whereabouts of patients prior to and at the time of onset.

(a) Six men emphatically denied any close contact with tropical vegetation, going directly from a ship to a cleared island area.
(b) Three cases who had been in contact with the jungle developed the lesions after 1 - 3 months aboard ship.
(c) Of the whole group, only one man gave a history of typical contact dermatitis occurring seven months before onset of the lichenoid process.

(Not Restricted)

A group of cases and controls were skin tested with a Chinese lacquer having a high content of the rhus irritant common to Pacific vegetation without indication of any increase in sensitivity among the dermatitis group.

Sixteen patients were given 4 mms. of the pure shellac used for coating atabrine tablets without untoward reaction.

In an attempt to determine the effect of new anti-malarial drugs on this dermatitis, the following studies were made:

(a) Three patients each were given therapeutic doses of SN6911 and SN7618, two promising experimental anti-malarials not closely related chemically to atabrine, without any untoward effect.
(b) Two drugs chemically similar to atabrine, SN8442 and SN5228, were administered to groups of four cases each. In each group three patients showed significant reactivation of lesions on small dosage (0.9 Gm.) of the drugs.

A group of 17 patients was given provacative doses of atabrine and in 16 of these cases the skin process was unmistakably reactivated.

Penicillin does not hasten healing. Spontaneous though gradual recovery occurs on cessation of atabrine. Complete recovery usually requires from 6 - 9 months or longer. Permanent disfigurement due to scars and atrophy results in a few cases. It appears that the most marked disfigurement occurs in those cases continuing to receive atabrine after the onset of the dermatitis. (Nav. Med. Res. Inst., Bethesda, Md.)

* * * * * *

(Not Restricted)

Postwar Problems in Tropical Diseases: In the early months of World War II, considerable apprehension existed among medical officers of the armed forces and among civilian physicians over the possibility of widespread dissemination of tropical diseases by returning military personnel. In the Southern Medical Journal of July 1945, Butler and Sapero discuss the reasons for the failure of various tropical diseases to become prevalent in the United States. The authors' summary and conclusions follow:

"Many so-called tropical diseases once common in the United States have disappeared or are declining in incidence due to improved health practices. Natural absence of vectors and differences in climatological and other environmental factors make the introduction of certain tropical diseases unlikely or impossible. The experience of World War I and, far more significant, two years' experience during the present war have failed to bring to light any instances of appreciable introduction of new diseases into this country.

(Not Restricted)

"It is not believed that malaria carriers among returned military personnel will cause a significant increase in total malaria in the United States, or will cause an appreciable reappearance of malaria in areas now malaria-free. The only disadvantage likely is that a new strain of vivax malaria may be introduced into areas in which malaria is endemic. This strain has a one to two years' course and recurs frequently during this period. The American Negro has no apparent racial resistance to this strain of benign tertian malaria.

"While it is thought possible that moderately numerous amebic infections may be contracted overseas and much bacillary dysentery has and will occur during active combat, it is not believed that the dysenteries will constitute a serious postwar problem.

"Dengue, while epidemic in the past in the United States, has not to date spread from the Pacific despite several severe outbreaks in the South and Central Pacific.

"Scrub typhus would appear to be barred from this country by the absence of a suitable mite vector, and should be of concern only if such a vector should be introduced.

"It has been impossible for filariasis to spread to the civilian population from troops having this disease because of the absence of patients harboring blood microfilariae at all, or in sufficient density to infect mosquito vectors. In that the disease appears to be subsiding, it would not appear that significant numbers of effective carriers will develop among the men currently infected.

"Several other diseases of the tropics are potential or actual disease hazards to troops in the Pacific and Far East, such as infectious jaundice, cholera, plague, schistosomiasis, endemic typhus and relapsing fever. In general these diseases already exist in the United States or are considered as unlikely invaders. Relatively little is known of Japanese "B" encephalitis and the type of infectious jaundice encountered in the Pacific. Leprosy may appear in a very small number of returned troops.

"Viewing the problem broadly it is felt that there is no cause for alarm regarding postwar morbidity from tropical diseases in the civilian population. An intensification of interest in tropical medicine is strongly indicated, nevertheless, for several reasons. The postwar physician will be called upon to treat occasional recurrent attacks of tropical diseases in returning service personnel. The prevalence of these diseases overseas has stimulated great lay interest, as well as apprehension, and the physician will be turned to as a

(Not Restricted)

source of accurate and up-to-date information. The bitter overseas fight to prevent tropical diseases has served to enhance interest in and underline the importance of public health measures, and the private physician must keep abreast of such developments. Finally, a global war and the multi-motored airplane have made the world much smaller, and areas once remote will draw much closer to us. If America is to have vast postwar commitments and responsibilities around the globe, Americans will travel as never before, and the diseases of the tropics will become familiar and of great economic and political importance. The American physician, from a professional standpoint, cannot afford to be left behind." (Pac. Fleet M. News, Dec. '45)

* * * * * *

Bacillary Dysentery Prevention Aboard Ship: The Senior Medical Officer of a ship of approximately 1100 officers and men reports upon the successful prevention of bacillary dysentery on his ship when in an anchorage in company with all classes of other ships which were experiencing certain inconveniences due to this disease. Through the obvious appreciation of the problem by the Commanding Officer and his carrying out in detail the various existing directives and recommendations of his medical officer, not a single dysentery case occurred on the ship.

Accepting the premise that WATER was the chief means of the spread, the problem resolved itself mainly into (1) prevention of the use of untreated water aboard ship for any purpose whatsoever, and (2) the proper treatment of the water that was used.

The first objective was a relatively simple problem. To remove the opportunity for using untreated water was mainly a matter of mechanics. Prior to entry into a harbor, known or suspected of being polluted, all salt-water outlets aboard the ship were secured and faucets were removed or plugged to exclude all chance of thoughtless persons inadvertantly turning them on. Distilled water from the ship's tanks was ordered to be used for all purposes, including swabbing down the decks. Swabs were not allowed to be dropped over the side for rinsing in the harbor water and the crew was closely watched to see that these orders were obeyed. In short, no controllable loophole was left by which infected salt water from the harbor could be brought aboard for any use.

The second objective was the chlorination of the water itself. It was determined that from 15 to 25 Gms. of the calcium hypochlorite aboard, when added to 1000 gallons of water, gave a residual chlorine content of from 0.2 to 0.5 p.p.m. after a holding period. The Senior Medical Officer concluded that

he would work toward a residual of from 0.4 to 0.5 p.p.m. and recommend that following chlorination the water not be used until after 12 hours. Before use, a sample from the tank was given a final test to prove the presence of residual chlorine, and at least once while the tank was in use, the water drawn from an outlet somewhere on the ship was tested for satisfactory residual chlorine.

One c.c. of orthotolidine testing solution added to 100 c.c. samples of the water to be tested was used to determine the residual chlorine. It was pointed out that if color standards for comparison and reading were not readily available, rough but satisfactory standards could easily be prepared by consulting text books on board.

The matter of the residual chlorine was stressed, calling attention to the fact that residual chlorine depended firstly, upon the available chlorine that could be obtained from any particular supply of calcium hypochlorite that happened to be accessible, and secondly, upon the organic content of the water to be made safe (available chlorine depends upon original quality and the time and conditions of storage before use). Concentrations of residual chlorine above 0.5 p.p.m. were carefully avoided because of the undesirable taste which results and becomes imparted to foods prepared with it.

Accessory Measures: In addition to forbidding the use of sea water for any purpose and chlorinating the water supply in the tanks with tested exactness, other items affecting the ship's sanitation were given special attention. Food handlers were given "pep talks", stressing all the proper food handling practices and re-emphasizing all angles of personal hygiene. Galleys and mess halls were rigidly inspected several times daily and by different inspecting officers. No laxity was permitted with respect to fly control, tops on G.I. cans, and disposal of garbage and trash. Garbage scows were never brought alongside the ship. The crew was warned in the "Plan of the Day" and also cautioned by division officers, against eating or drinking anything obtained from native sources while on liberty ashore.

Conclusions: It is the expressed opinion that even in heavily infected areas, dysentery aboard ship can be prevented by exacting attention to (1) all food handling practices including the personal hygiene of food handlers and garbage disposal; (2) the water supply, including complete exclusion of the use of salt water from the anchorage for any purpose whatsoever; (3) insect control; and (4) the education of all hands as to the problem in such a way as to acquire their enthusiastic cooperation.

* * * * * *

Contamination of Water: A recent quarterly sanitary report of a large Navy yard again focuses our attention on a most serious threat to public health. This hazard is brought about through the simple and easily preventable practice of pumping sewage-contaminated water into the fresh water lines where it may be used without restriction for drinking, and in the preparation of uncooked foods. This hazard, although serious, is admittedly less where the fresh water supply has undergone chlorination and is fortified with some residual chlorine than where the supply is furnished by a municipality or other source not fully appreciative of the benefits of residual chlorine at the tap, and where the Navy has not yet installed in their main supply line their own chlorinating apparatus.

A knowledge of such hazards and an alertness on the part of medical department personnel may prevent these accidents or help detect them early when they do occur:

"On 9 July 1945, ships A and E, tied to a berth, were taking aboard salt water from shore connections. Ships A and E were also taking on fresh water from the pier via a Y-connection on the A. The E was discharging the fresh water into its own salt-water lines at the same time that the salt-water line on the E was connected to the Yard high pressure salt-water system. Thus the E's fire and flushing system was connected to both the fresh-water and the salt-water system ashore. The higher pressure on the salt-water side undoubtedly reversed the flow of salt water into the fresh-water line aboard the A and into the fresh-water mains on the pier. The fresh-water outlet on the pier was not protected by a check valve. The unauthorized connection aboard the E had existed for not more than two hours before it was discovered by a Medical Department representative who recommended its immediate correction.

"On 25 July 1945, contamination of ships' and Yard fresh-water supply occurred as a result of failure to comply with existing directives. Ship S requested fresh and salt-water shore connections on 17 July 1945. These connections were made on 18 July 1945. On 18 July 1945, ship A tied alongside S and requested fresh water. A Y-connection was inserted on the shore fresh-water line supplying the S. Both ships were therefore supplied with fresh water from the same shore connection on the pier; one hose from the Y shore connection went to the S, the other hose outboard over the S to the A. On the same day the A completed taking on fresh water, disconnected the fresh-water hose and departed from the Yard, leaving the hose that had supplied it with fresh water lying across the deck of the ship S. This hose was used by the S from 18 July to 25 July to flush its boilers with fresh water. On 25 July an unidentified person attached the ship's end of this same fresh-water hose to a forked salt-water connection aboard the S. The S started its pump at approximately 1030. At 1200 it was noted that salt water had been pumped into its fresh-water lines aboard ship. At approximately 1400, 25 July 1945, the ship was notified

and took immediate action. Apparently, contaminated water had also been forced into the Yard fresh-water system via a cross connection aboard the S. Salt water also was reported to be present in a Yard building. Following the discovery of contamination in Yard fresh-water mains, fifty water samples were obtained from ships and fifteen from various locations in the Yard in the areas of contamination. Ten ships and two buildings were found to have contaminated water. After the extent of contamination was determined, all water lines in the affected area were chlorinated. Chlorination was continued throughout the night until samples taken at distant points in the area involved showed a residual chlorine of 1.0 p.p.m. or more. Subsequent samples were found to be negative for contamination.

"During the course of a routine waterfront inspection on 29 August 1945, a cross connection was discovered on the east end of the south side of Drydock No. 3. A portable booster trailer pump had been used by a shop to wash down the U.S.S. K in Drydock No. 6. This pump was equipped with two intake lines, one of which was connected to a fresh-water outlet on the same dock. An investigation was immediately begun. Water samples were obtained from the area bounded by Drydock No. 3 to Drydock No. 4, and the contamination was found to be confined between the north side of Drydock No. 4 and the south side of Drydock No. 3. Fresh water on ships in Drydocks 3, 6, 7, and 4 was found to be contaminated. Fresh-water samples were obtained from the ships involved and chlorination was begun at approximately 1800 and continued throughout the night. Subsequent tests revealed adequate chlorination of the Yard mains involved. Emergency fresh water was supplied to ships in Drydocks 3, 6, 7, and 4, and ships' officers were given instructions for chlorination of fresh-water lines and tanks. Tests were continued until all lines were found to have sufficient chlorine residuals and were free from contamination.

"On the morning of 9 September 1945, at approximately 0530, salt water was discovered coming from fresh-water outlets aboard the U.S.S. G. Investigation revealed that gross contamination of all fresh water aboard ship had resulted from a cross connection in the spud locker adjacent to the spud-peeling machine. The connection between fresh and salt-water lines was immediately broken, temporary fresh water from the pier was supplied to the ship, and all fresh-water lines aboard ship were flushed. Chlorination was begun at approximately 0830 on 11 September 1945 and continued for five hours with 100 p.p.m. Following chlorination, all fresh-water lines aboard ship were thoroughly flushed and samples collected for bacteriological and chemical examinations. Results indicated the complete absence of contamination and the presence of adequate chlorine residuals.

"On 13 September 1945, during the course of a routine inspection aboard the U.S.S. M, a large carrier, the Sanitation Officer observed the presence of

unmarked fresh and salt-water spigots in the vegetable spaces. He suspected the use of contaminated salt water by mess attendants in the preparation of vegetables. The Medical Officer aboard the ship was notified immediately and it was recommended that all salt-water outlets in the vegetable spaces be secured. On the same day specimens of fresh water received for chemical and bacteriological examination revealed the presence of contaminated water in the fresh-water lines aboard ship. The Senior Medical Officer was notified and chlorination of fresh-water tanks and lines was recommended. A portable chlorinator was made available and chlorination was accomplished. On 18 September 1945, tests on fresh water were repeated and contamination was again discovered. Chlorination with 50 p.p.m. was recommended and following a conference with the Ship's Officers it was agreed that the above recommendations be carried out. Following chlorination of all ship's lines the fresh water has been re-examined and found to be consistently negative for contamination.

"On 26 September 1945, the U.S.S. A was discovered to have contamination of its fresh-water lines and tanks. Investigation disclosed a cross connection in the spud-peeling machine. The connection was broken, salt water was secured and instructions issued for sterilization of both tanks and fresh-water lines."

Because of the foregoing, it would seem well to invite attention to the excellent directive governing the practice of ship-to-shore water connections issued by OpNav and published in the Navy Department Bulletin of 31 May 1945 as 45-554, and printed in the Bumed News Letter, Volume 6, Number 1, dated July 6, 1945. (Prev. Med. Div., BuMed)

* * * * * *

Protein Hydrolysates and Pure Amino Acids: In answer to a request by the Surgeon-General of the Navy for further information and opinion on protein hydrolysates and amino acids, the Division of Medical Sciences of the National Research Council has formulated a reply, a summary of which follows:

Relative Merits of Preparations of Protein Hydrolysates Now Available. The experience of those most familiar with protein hydrolysates indicates that Amigen is the best product now available. Certain other hydrolysates may show differences in undesirable manifestations on parenteral use or be more palatable orally, but the indications are that they also present deficiencies in content of the essential amino acids.

Protein Hydrolysates Solutions - Present and Prospective Usefulness. Parenterally-administered Amigen solutions, when used properly, have been

and will likely continue to be useful where indicated in the adjustment of body nitrogen balance in those persons who cannot or should not be given protein by mouth. One consultant states that, in his experience, Amigen solution as furnished by the manufacturer during the past two years has been satisfactory when administered at a reasonable rate and in a manner which did not permit contamination during the period of the intravenous infusion. The case with which contamination of such solutions can occur and the serious sequelae that can result cannot be overemphasized. Considerable animal experimentation and work carried out under OSRD contract indicate that little benefit to nitrogen balance is derived by Amigen infusion unless the total daily caloric requirements of the individual are being quite adequately met. It is suggested that the calories required can be met by supplemental glucose infusions administered in not less than eight or ten hours per day. The belief is expressed that either Amigen will be much improved or another better hydrolysate developed. It is noted that the work of Albright suggests that Amigen solution should be fortified with an appropriate amount of potassium.

Protein Hydrolysate Powder - Present and Prospective Usefulness: The powder has proved to be useful in supplementing the oral intake of individuals with gastro-intestinal disturbances which render digestion of ordinary protein difficult or of individuals who require a particularly high protein intake. The beneficial effects of Amigen on peptic ulcer as reported in work carried out under OSRD contract is pointed out. Amigen powder has been used as the only source of amino acids in the oral nutrition of infants allergic to milk and suffering from eczema. Although the infants did well, the advisability of continuing such feedings over a long period of time is questioned. It would not seem possible to improve the palatability of Amigen without seriously altering its content of the essential amino acids. Other more palatable hydrolysates which are available are considered deficient in certain essential amino acids.

Pure Amino Acids - Present and Prospective Usefulness: Thus far the cost and lack of availability of adequate supply of the pure amino acids have prevented their clinical use. It is believed that the work of Whipple and Madden gives ample evidence of the superiority of pure amino acids over casein hydrolysates, for the proportion of amino acids can be made to suit the nutritional requirements and to eliminate factors which might cause untoward symptoms in intravenous administration, such as the excessive glutamic and aspartic acids. Opinion is expressed that the stability of solutions of pure amino acids having high biological value would exceed the stability achievement of hydrolysates and that lyophilization of the pure amino acids (or hydrolysates) with sterilization following solution when ready for use might also increase their stability.

* *

A paper by Dr. S. C. Madden, soon to be published in Surgery, Gynecology and Obstetrics, presents further interesting information which is summarized in the author's own discussion printed below:

"Of what are amino acids capable? When is their use indicated? Are they toxic? Are they practical? Answers to all these questions are not completely given in the comments accompanying the observations in the body of the paper but the trends of the answers are suggested.

Proper mixtures of amino acids are capable of providing the protein nitrogen requirements of man and animals over long periods of time. They may be given either by mouth, by vein, or by subcutaneous injection. Intraperitoneal injection has been successfully used in the dog. The importance of continuously adequate nutrition need not be discussed here. Either mixtures of crystalline amino acids or certain protein digests are capable of providing the protein share of continuously adequate nutrition.

The formula for the perfect preparation of protein nitrogen is yet to be written. There are advantages and disadvantages to all substitutes for natural protein. Digests are of less known composition, more difficult of reduplication, more inflexible in composition, currently less tolerable upon rapid injection than certain synthetic mixtures of amino acids. On the other hand, they are inexpensive to produce. Amino-acid mixtures contain the unnatural isomers of certain amino acids, but as discussed below no real toxicity has been demonstrated for these unnatural isomers. The question of better utilization of amino acid mixtures or digests favors the former, as judged by plasma protein production experiments in dogs.

Uses for amino acids other than for general nutritive purposes may be expected to be found. Individual amino acids or mixtures of amino acids may be involved. The use of methionine in neutralizing or alleviating the effects of toxic agents has been described in dogs and tested clinically. It is a further stimulating suggestion that most of the effect of added protein intake in preventing negative nitrogen balance after injury may be achieved equally well by added methionine.

Indications for the use of amino acids for nutritional purposes exist only when natural protein cannot be effectively used. However, for the feeding of patients who cannot or should not be given protein by mouth, their value when given parenterally is great.

There are indications for their use orally. Co Tui has found that Amigen has marked value in the treatment of peptic ulcer. Here, buffering capacity of amino acids may be as important as their nutritive value. Used to fortify the diets of protein-depleted individuals, they should theoretically have considerable value. Such individuals must have reduced capacity to secrete the intestinal enzymes, which are proteins. Predigested protein should therefore be better handled. To illustrate this point, an observation of Reifenstein and

Albright is pertinent. A young man fed wholly by parenteral Amigen and glucose for 26 days was given at the next meal a full diet of natural food by mouth. He accepted it and digested it without the slightest disturbance. A fasting individual, protein depleted, would usually not be capable of this but must start with cautious feeding gradually increased. The difference appears to lie in the reduced capacity of the depleted individual to produce gastrointestinal juices and enzymes.

No serious toxicity has yet been described with the use of proper amino acid mixtures or digests. Intolerance to the rapid injection of amino acid mixtures containing glutamic acid or much aspartic acid is manifested by vomiting in dogs. The usual casein digests contain considerable glutamic acid. It is suggested that phenylalanine may be less tolerable than the other essential amino acids. Toxicity has been inferred for unnatural isomers but not proved by the demonstration of unusual urinary metabolites related to their administration.

The use of amino acids will become increasingly practical, to answer the last question above. Further improvements are desirable in the palatability of oral preparations. Greater availability of the more tolerable intravenous preparations, such as proper mixtures of the crystalline amino acids or of digests free of glutamic acid and aspartic acid, should be provided. Complete parenteral feeding is not now limited by the nitrogen intake so much as by the lack of suitable means of providing a high caloric intake. Effort to produce a satisfactory fat emulsion for intravenous administration has not been successful.

Summary. There are two sources of protein for meeting the needs of the body. One is that portion of body protein which can be mobilized for a particular need in time of emergency, the reserve protein. The other is the main and ultimate source of protein, the exogenous intake or normally dietary protein.

Of the two general routes for supplying the need for exogenous protein in disease therapy, the oral route is shown to be preferable. The parenteral routes are shown to be valuable, even life-saving, when oral intake is impossible or inadvisable.

Mixtures properly prepared of the crystalline amino acids - threonine, valine, leucine, isoleucine, lysine, tryptophane, phenylalanine, methionine, histidine, arginine, and glycine - are adequate for the protein nitrogen needs and marked weight gain of patients over long periods of time. Given parenterally as the sole protein nitrogen intake, these amino acids are adequate for nitrogen balance in human patients.

Omission of histadine from a mixture of amino acids given intravenously to a patient with ulcerative colitis resulted in a negative nitrogen balance.

One amino acid mixture gave nitrogen retention and urinary nitrogen partition similar to that obtained with the protein hydrolysate Amigen during a brief comparison. Neither was quite so well utilized parenterally as orally, and neither was quite so well utilized orally as the better natural food proteins.

No toxicity to the unnatural isomers of 7 essential amino acids was demonstrated.

These crystalline amino-acid mixtures are well tolerated subcutaneously as well as intravenously even in concentrations of greater than 12 per cent in aqueous solution. It appears, moreover, that further improvements in tolerance can be made. Phenylalanine has been shown to be a limiting factor in tolerance.

Marked clinical improvement occurred in a patient with chronic ulcerative colitis fed certain amino-acid mixtures parenterally together with carbohydrate, fat and accessories orally. No improvement occurred when the amino acids were also given orally.

The value of certain amino acid mixtures in the preoperative and postoperative nutrition of 2 patients was also demonstrated.

Plasma protein levels in the range regarded as "low normal" may be found in patients showing virtually complete exhaustion of body protein reserves. A high protein intake actually measured and given to such a protein-depleted patient with a chronically unhealed wound brought about complete healing after all other treatment had failed.

* *

Previous notes on protein hydrolysates and amino acids published in the Bumed News Letter:

Title	Issue
Protein by Subcutaneous Injection	March 5, 1943
Proteins in Nutrition	May 28, 1943
Parenteral Protein Administration	March 3, 1944
Amino Acids (Amigen), Oral and Parenteral	July 21, 1944
Protein Deficiency and Infection	December 22, 1944
Protein Digests: Administration of	April 13, 1945
Amino Acids, Tolerance to	June 22, 1945
Blood Amino Acids	June 22, 1945

The Treatment of Mercury Bichloride Poisoning with BAL, Additional Case Reports: The six cases reported here of poisoning by mercury bichloride treated by intramuscular injections of BAL are in addition to the three cases reported in the Bumed News Letter of September 28, 1945.

There were five women, three of whom were colored, and one white man. The ages of the patients ranged from 18 to 32 years. The amount of mercury bichloride which these patients had swallowed varied and was not always remembered accurately. Two patients were supposed to have taken from 1/2 to 3 tablets, or from 0.5 to 1.5 Grams. One patient had taken 3 tablets or 1.5 Grams, one patient, 2 tablets or 1 Gram, one patient, 1 tablet or 0.5 Grams, and one patient had dumped an unknown amount of powdered mercury bichloride into a glass of water, of which she had swallowed about one quarter.

Five of these patients were admitted to the Johns Hopkins Hospital within one hour and 25 minutes and one hour and 45 minutes from the time that they had taken the bichloride of mercury. One patient was not admitted until 3 hours after she had swallowed 2 tablets dissolved in soda water.

None was in shock on admission. All patients had been subjected to gastric lavage with sodium sulfoxalate either before admission or before BAL was injected. The intramuscular injections of BAL were started within a few minutes after the patients had been admitted to the hospital. Three c.c. or 300 mg. were administered as the first dose, 150 mg. was given one hour later and 150 mg. given two to three hours after the second dose. Most of the patients received from 600 mg. to 750 mg. within the first 12 hours after admission. Injections of BAL were continued over a period of from 4 to 6 days. The total amount administered over this period to each patient varied from 1.35 to 2.4 Grams. No noticeable toxic reactions to these injections were encountered.

In addition to treatment with BAL, large quantities of salt solution and glucose were given intravenously during the first day or two. The amounts varied between 3,000 and 6,000 c.c. As a rule there was some retention of fluid during the first 24 to 48 hours, with varying degree of diuresis later.

Within from 4 to 6 days all patients appeared entirely normal. One patient was discharged on the 5th day and five on the 7th day after admission.

When BAL is administered within a few hours after the ingestion of mercury bichloride, it may be very difficult to predict, from any symptoms or examinations made during the first 12 hours or so, what course the subsequent illness would have pursued had BAL not been administered. It is not certain that any of these patients would have died under the usual forms of

treatment, but from the study of a control group of 227 cases, it is likely that at least two or three of them would have shown evidence of severe renal injury if BAL had not been administered. (OEMcmr-253 - Longcope)

* * * * * *

Penicillin Treatment of Gummatous Syphilis: Twenty-one patients with benign late gummatous syphilis were treated with sodium penicillin in total dosages ranging from 60,000 to 4,000,000 Oxford units. Cutaneous, mucocutaneous, or mucous membrane gummas were present in 18, while 4 had osseous lesions. Visceral involvement (hepatic gummas) was present in 2 cases. Follow-up study periods ranged from 99 to 676 days with an average of 427 days.

Cutaneous and mucosal gummas underwent rapid and progressive improvement with penicillin. There was a single incipient relapse and one treatment failure, both of which healed completely subsequent to a second, greater amount of the antibiotic substance. Osseous lesions responded well. Visceral gummas showed relatively rapid symptomatic improvement, followed by a slow, progressive decrease in size of the involved viscus over a period of weeks or months. A case of gummatous keratitis responded satisfactorily.

The use of penicillin in the treatment of benign late gummatous syphilis is at least as effective as other methods of antisyphilitic treatment, the average time required for healing of lesions being 83 days or less. Total dosages of 1,700,000 Oxford units or more give consistently satisfactory results, particularly in cutaneous gummas. At present, the authors favor the use of a minimum total dosage of 2,000,000 Oxford units for the in-patient treatment of benign late gummatous syphilis. The use of this practically nontoxic agent is to be preferred in the treatment of patients with hepatic syphilis. (OEMcmr-393, Dexter and Tucker, Johns Hopkins Univ., Ms. for publication - CMR Bulletin #68)

* * * * * *

Resistance of Gonococcus to Penicillin: Penicillin-fastness developed most rapidly in gonococci under conditions which permitted the greatest number of viable micro-organisms to be transferred to a higher concentration of penicillin at each transfer. One strain of gonococcus acquired the ability to grow on media containing 21 units per c.c. No appreciable increase in penicillin-tolerance resulted from repeated exposure to bacteriostatic concentrations of penicillin. (OEMcmr-316, Miller and Bohnhoff, Univ. of Chicago, Ms. for publication - CMR Bulletin #68)

* * * * * *

Resistance of Meningococcus to Penicillin: None of 96 strains of meningococci was found to be naturally resistant to penicillin in vitro. Seven strains acquired resistance to penicillin readily and all at about the same rate during repeated subcultivation on agar containing increasing concentrations of penicillin. The strains remained virulent for mice as penicillin-resistance increased, except in the case of one strain which lost virulence at 18 units per c.c. Infections produced with penicillin-resistant strains required very large doses of penicillin for their control. (OEMcmr-316, Miller and Bohnhoff, Univ. of Chicago, Ms. for publication - CMR Bulletin #68)

* * * * * *

(Not Restricted)

Tourniquet Paralysis: Severe damage of peripheral nerves can occur as a result of application of a rubber tourniquet for surgical hemostasis. Factors involved in the production of the paralysis are (a) pressure necrosis at the site of tourniquet application, with fibrosis and production of neuromas, (b) ischemia below the site of application of the tourniquet with death of the ischemic portion of the nerve, fibrosis and production of a neuroma in continuity, and (c) a combination of the foregoing two situations. The radial and sciatic nerves are the most vulnerable to tourniquet paralysis.

On discovery, every case of tourniquet paralysis of a peripheral nerve should receive immediately intensive physical therapy over a period of from eight to twelve weeks. If, at the end of this time, no appreciable return of function is evident, surgical exploration of the involved nerve should be performed and a neurolysis or even neurorrhaphy (if feasible) should be attempted.

The Campbell-Boyd pneumatic constrictor appears to be the most efficient and least harmful of the constrictors. (J.A.M.A., Oct. 6, '45 - Speigel and Lewin)

* * * * * *

An Experimental Evaluation of Sulfasuxidine and Sulfathalidine in Surgery of the Colon: In controlled experiments Poth and co-workers have shown that both sulfasuxidine and sulfathalidine are valuable adjuvants in surgery upon the colon of the dog. The reaction, as revealed by the amount of edema of the omentum adherent to the line of suture, is significantly less when the bacterial flora is modified by the administration of the drugs. The most clear-cut evidence of the value of these drugs is revealed by the results which followed the method of open anastomosis, wherein no effort was made to prevent fecal soiling of the operative field. Even though the degree of spillage was much greater following the administration of sulfasuxidine because of the semi-fluid nature of the contents of the bowel, there was a striking difference in the operative mortality and morbidity. Forty-three per cent of the control animals died of generalized peritonitis due to disruption of the line of suture. One hundred

(Not Restricted)

per cent of the control animals showed gross leakage at the line of suture. These observations are in contradistinction to the results of no deaths and no gross leakage through the suture line when the animals had received sulfasuxidine and sulfathalidine. Furthermore, in the control experiments there was acute inflammation and little evidence of healing and repair by the fifth post-operative day, whereas, in the animals given the drug therapy, the inflammation had subsided and the tissues had undergone orderly repair and healing.

This study shows sulfasuxidine and sulfathalidine to be valuable adjuvants in surgery on the colon of the dog. The indications are that the so-called aseptic methods of anastomosis should be used whenever possible, but it is evident that an open technic may be undertaken with a considerably increased degree of safety. These observations support the satisfactory results obtained when man is treated in a similar manner. (Surgery, Nov. '45)

* * * * * *

(Not Restricted)

Dental Caries and Fluorine: A dental study was made in the summer of 1943 on Japanese children at two war relocation centers.

The only water available to one group of 120 children contained fluorine in the amount of 0.1 p.p.m. while the only water available to the other group of 196 children contained fluorine in the amount of 3.0 p.p.m. The diets of both groups were quite similar and adequate.

A repeat dental study on the same groups in the summer of 1945 revealed that the children exposed to the water with the 3.0 p.p.m. fluorine content showed far less new caries in teeth which were present in the mouth and free of caries in the 1943 study than did the children in the group exposed to water with only 0.1 p.p.m. fluorine.

The author considers that the only significant difference that existed between the two groups was the matter of the fluorine content of the water consumed by each. He then points out that the findings are not intended to constitute an endorsement for the addition of as much as 3.0 p.p.m. of fluorine to community drinking supplies for the purpose of reducing caries incidence, but that the data do provide information showing that addition of small amounts of fluorine to community water supplies deficient in fluorine effects a reduction in caries incidence in the erupted permanent teeth of residents of school age, and that such caries inhibition is most noticeable in the erupted teeth of younger children. (Pub. Health Rep., Dec. 7, '45 - Klein)

* * * * * *

Effect of Hyperventilation on Cerebral Metabolic Activity: Schmidt and Rawson have studied certain effects of voluntarily and passively induced hyperventilation of moderate intensity. The effects on the following functions were noted: cerebral blood flow (by the N_2O method), cerebral arteriovenous O_2 difference, cerebral O_2 consumption, cardiac output (by the ballistocardiograph), arterial blood pressure, pulse rate, pulmonary ventilation, and total O_2 consumption.

The findings support the belief that cerebral vasoconstriction is one of the important results of hyperventilation, carried out voluntarily or passively with 21 per cent O_2 in normal young men lying at rest at sea level. The observed diminution in cerebral blood flow (about 30%) with moderate hyperventilation (arterial pCO_2 22-32 mm. Hg) would produce cerebral anoxia corresponding to inhalation of ambient air at altitudes higher than 20,000 feet.

The mean findings for cerebral blood flow and O_2 consumption at rest, calculated on a basis of a 1400 Gm. brain, came to 927 and 62 c.c. per minute, which are practically identical with the highest "normal" values (1040 and 63 c.c.) calculated from direct measurements in monkeys. This indicates that the present estimates probably are not excessive. According to these mean values, about 20 per cent of the total cardiac output and about 24 per cent of the total O_2 consumption are dedicated to the requirements of the brain (about 2 per cent of the body weight) as measured under the conditions of this test. (OEMcmr-28, Schmidt and Rawson, Univ. of Pa., Ms for publication - CMR Bulletin #50)

* * * * * *

Role of the Adrenal Cortex in Acclimatization to Heat: A period of negative nitrogen balance is characteristic of the process of acclimatization to heat. It occurs during the time when, in response to the need for salt conservation, the NaCl concentration of the urine is being sharply decreased. It appears that the acute physiological load imposed upon the adrenal cortices by the stress of the new adjustments in electrolyte metabolism (made necessary by life in humid heat) is responsible for both the decrease in urine and sweat salt concentrations and the negative nitrogen balance.

When partially acclimatized men with a low NaCl concentration in the sweat and a persisting negative nitrogen balance were given 10 mg. of desoxycorticosterone (Doca) intramuscularly twice a day, there was a significant further fall of sweat NaCl concentration, a marked positive salt balance with rapid gain of weight, and an abrupt change from negative nitrogen balance to nitrogen equilibrium. When the administration of Doca was stopped there was a sharp rise in sweat NaCl, a return to negative nitrogen balance, and clinical evidence of loss of acclimatization for some days.

These observations tend to confirm the impression that the negative nitrogen balance during acclimatization is secondary to an increased adrenal cortex activity stimulated by the need for salt conservation. Administration of the exogenous hormone places the gland in a state of relative rest, and sudden removal of the treatment finds the gland unprepared to take over the burden quickly. (OEMcmr-232, Conn and Johnston, Univ. of Michigan - CMR Bulletin #67)

* * * * * *

(Not Restricted)

Course in Medical Statistics: The Bureau of Medicine and Surgery is arranging for the training of Medical Officers in the speciality of Medical Statistics at the School of Hygiene and Public Health of Johns Hopkins University. Medical Officers wishing to take this course should submit an application to the Chief of the Bureau of Medicine and Surgery. (Medical Statistics Div., BuMed - F. R. Lang)

* * * * * *

(Not Restricted)

Need for Flight Surgeons: Demobilization has resulted in a depletion of flight surgeons below the requirements necessary for the postwar Naval Aviation Program. Applications for training in aviation medicine leading to designation of Naval Flight Surgeon are requested at the earliest date. This training will be limited to those of the rank of Lieutenant Commander or below, preferably in the rank of Lieutenant.

The following information will be of assistance to medical officers considering such training. The School of Aviation Medicine is conducted at the Naval Air Station, Pensacola, Florida. The classes are assembled on an average of every four months. The next class will begin in February. The course of instruction consists of approximately two months of didactic work covering the subjects of Applied Aviation Physiology; Eye, Ear, Nose and Throat; Psychiatry, and other subjects applicable to aviation medicine. Following the didactic work, students are then assigned to flight indoctrinational training and ground school work of approximately six weeks. Upon completion of the entire syllabus of training, the student is designated as Naval Flight Surgeon and receives his wings.

It should be pointed out that flight surgeons have established themselves as a recognized and essential part of the Naval Medical Establishment, and are an inseparable part of the aeronautical organization. A vast amount of aviation medicine research will be required in support of the postwar program. It is essential that the program for aviation medicine be maintained and advanced. In order to maintain the clinical background of flight surgeons, it is

(Not Restricted)

the desire that they be rotated periodically in hospital assignments for this purpose.

Medical officers of the regular service of the rank of Lieutenant Commander or below are urged to consider the foregoing with a view to submitting their applications for this training to the Bureau at the earliest date.

* * * * * *

(Not Restricted)

Notice to Officers of the Dental Corps: Attention of all dental officers who are contemplating return to civilian life is invited to the January issue of the Journal of the American Dental Association.

This issue is devoted entirely to the interests of the veteran dentist. Dates of licensing examinations in various states, opportunities for salaried positions in Dentistry, and other helpful items are included.

* * * * * *

(Not Restricted)

American Board of Ophthalmology: The American Board of Ophthalmology will conduct examinations in 1946 as follows:

New York	April	Approximately 10th through 13th
San Francisco	June	22nd through 25th
Chicago	October	9th through 12th

A new ruling requires that previously accepted candidates mail their lists of surgery to the Board office at least 60 days prior to their examination. All new applicants are now required to send their list with application.

* * * * * *

(Not Restricted)

Conservation of Penicillin: In recent months a progressively critical shortage of penicillin has threatened to deplete the national supply to a level below that necessary for life-saving purposes. One important and fortunately remediable cause for this shortage is the unprecedented demand for oral dosage forms which require at least three times the parenteral dosage.

Every effort should be made to conserve penicillin as carefully as possible within the limits of sound medical practice, and in general to restrict its use to parenteral administration. (Chief, BuMed - Ross T. McIntire)

(Not Restricted)

Public Health Foreign Reports:

Disease	Place	Date	Number of Cases
Plague	Argentina, Santiago del Estero Province-Estacion Lavelle	September '45	1 (1 fatal)
	Argentina, Tucuman Province, Las Canitas	October '45	1 (1 fatal)
	New Caledonia, Loyalty Islands, Mare Island	September '45	60 (30 fatal)
	Portugal, Azores	Oct. 13-20, '45	11 (2 fatal)
Smallpox	Angola	August '45	118
	British E. Africa, Tanganyika	Oct. 27-Nov. 3, '45	583 (51 fatal)
	Morocco (French)	Oct. 21-Nov. 20, '45	438
	Rhodesia, Northern	Oct. 27-Nov. 3, '45	507
	Union of S. Africa	September '45	223 (10 fatal)
Typhus Fever	Chile	Sept. 9-Oct. 6, '45	54 (4 fatal)
	Egypt	Oct. 13-20, '45	21
	Great Britain, England	Nov. 3-10, '45	3
	Hungary	Jan. 1-Sept. 1, '45	10,000 approx.
	Morocco (French)	Oct. 21-Nov. 20, '45	260
	Turkey	Nov. 10-24, '45	50
	Union of S. Africa	September '45	101

(Pub. Health Foreign Reps., Dec. 7 & 21, '45)

* * * * * *

(Not Restricted)

The Naval Medical activities listed below have been disestablished by authority of the SecNav. Disestablishing letters in full may be found in the Navy Department Semimonthly Bulletin of 15 December 1945.

Op24-pd, Serial 139P24, 4 December 1945

Special Augmented Hospital No. 4,
Okinawa Island, Ryukyu Islands.

Op24-pd, Serial 155P24, 7 December 1945

U. S. Fleet Hospital Number 105,
Noumea, New Caledonia.

Op24-pd, Serial 179P24, 7 December 1945

U. S. NAVY V-12 MEDICAL UNITS

Naval district		Date of disestablishment
Third	Yale University	15 December 1945
Third	Cornell University	19 December 1945
Third	Long Island College of Medicine	22 December 1945
Third	New York Medical College	22 December 1945
Third	New York University	22 December 1945
Third	University of Buffalo	22 December 1945
Third	Syracuse University	22 December 1945
Third	Albany Medical College	22 December 1945
Fourth	University of Pittsburgh	22 December 1945
Fifth	Medical College of Virginia	15 December 1945
Fifth	University of West Virginia	15 December 1945
Fifth	University of Virginia	22 December 1945
Sixth	University of North Carolina	8 December 1945
Sixth	Emory University	15 December 1945
Sixth	Bowman Gray School of Medicine	18 December 1945
Sixth	University of Georgia	19 December 1945
Sixth	Medical School	22 December 1945
Eighth	University of Tennessee	15 December 1945
Eighth	Vanderbilt University	16 December 1945
Eighth	University of Arkansas	21 December 1945
Eighth	Baylor University	22 December 1945
Eighth	Southwestern Medical College	22 December 1945
Ninth	University of South Dakota	7 December 1945
Ninth	University of North Dakota	14 December 1945

(Not Restricted)

Naval district		Date of disestablishment
Ninth	University of Iowa	15 December 1945
Ninth	University of Missouri	15 December 1945
Ninth	Washington University	15 December 1945
Ninth	Creighton University	19 December 1945
Ninth	University of Indiana	21 December 1945
Ninth	University of Indiana	21 December 1945
Ninth	University of Minnesota	21 December 1945
Ninth	Ohio State University	21 December 1945
Ninth	Loyola University	22 December 1945
Ninth	Northwestern University	22 December 1945
Ninth	University of Chicago	22 December 1945
Ninth	University of Illinois	22 December 1945
Ninth	Wayne University	22 December 1945
Eleventh	University of Southern California	21 December 1945
Twelfth	University of Utah	1 December 1945
Twelfth	University of Colorado	22 December 1945
Thirteenth	University of Oregon Medical School	22 December 1945

U. S. NAVY V-12 DENTAL UNITS

Naval district		Date of disestablishment
Third	New York University	22 December 1945
Third	University of Buffalo	22 December 1945
Fifth	Medical College of Virginia	15 December 1945
Eighth	University of Tennessee	15 December 1945
Eighth	Baylor University	15 December 1945
Eighth	Texas University	22 December 1945
Ninth	University of Iowa	15 December 1945
Ninth	Washington University	15 December 1945
Ninth	University of Indiana	21 December 1945
Ninth	University of Indiana	21 December 1945
Ninth	University of Minnesota	21 December 1945
Ninth	Ohio State University	21 December 1945
Ninth	Loyola University	22 December 1945
Ninth	Northwestern University	22 December 1945
Ninth	University of Illinois	22 December 1945
Eleventh	University of Southern California	15 December 1945

* * * * * *

(Not Restricted)
Pers-12-emw, P3-1
13 December 1945

To: All Ships and Stations.

Subj: Prostitution, Policy Regarding - Control of Venereal Disease.

(Not Restricted)

Ref: (a) BuPers Circ. Ltr. 31-41.
(b) Alnav 18-41; N. D. Bul. Cum. Ed. 1943, 41-2001, p. 179.
(c) "An Agreement by the War and Navy Departments, the Federal Security Agency, and State Health Departments on Measures for the Control of the Venereal Diseases in Areas Where Armed Forces or National Defense Employees Are Concentrated."
(d) Rest. joint BuNav-BuMed ltr. BuMed P3-2/AT12(021-40); BuNav-147-RNC, P3-1(85), of 25 Mar. 1941; N. D. Bul. Cum. Ed. 1943, 41-2064, p. 1160.

1. The restricted classification of reference (d) is hereby removed.

2. It is directed that all levels of naval personnel be informed of the provisions and intent of reference (d).

3. Flag and commanding officers shall be guided by the principles and intent of reference (d) wherever and whenever naval personnel are involved.

4. No action shall be taken that might be construed as encouraging, tacitly approving, or condoning prostitution. Commanding officers will not neglect, however, other means of reducing venereal disease in their respective commands but will continue to exert every effort toward this objective.

--BuMed. Ross T McIntire. --BuPers. Louis Denfeld.

* *

Note on References:

Reference (a) states that the Federal Security Administrator has been designated as Coordinator of matters pertaining to health as related to National Defense.

Reference (b) states that Commanding officers of ships and stations will cooperate to the maximum extent with the state and local public health authorities in the suppression of prostitution.

Reference (c), "An Agreement by the War and Navy Departments, the Federal Security Agency, and State Health Departments on Measures for the Control of Venereal Diseases in Areas Where Armed Forces or National Defense Employees Are Concentrated" outlined a plan for a coordinated effort by these agencies to control venereal disease in enlisted personnel and civilians respectively by diagnosis and treatment; by reporting the sources of infection; by isolating infected persons during communicability; by decreasing contacts with infected persons; by education on venereal disease; and by requesting assistance from voluntary organizations.

(Not Restricted)

Reference (d) repeats and emphasizes (a), (b), and (c) and points out in connection with (b) that "suppression" is not to be interpreted as "segregation" or "discouragement."

* * * * * *

(Not Restricted)
BuMed-D-CEP
A3-3/EN10 (785)
12 December 1945

To: All Ships and Stations.

Subj: NavMed-785 (5/45), Semiannual Dental Officer Personnel Report - Revision of.

Ref: (a) BuMed ltr. 12 June 1945; AS&SL Jan.-June 1945, 45-645, p. 400.
(b) BuMed ltr. 23 July 1945; N. D. Bul. of 31 July 1945, 45-894.

Enc: (A) Sample NavMed-785 (Rev. 10/45).

1. Subject form was established and instructions issued in reference (a) and reference (b).

2. The report for the period ending 1 January 1946 will be submitted on the revised form now being distributed (enclosure).

3. Attention of all dental officers is invited to the following changes which appear in the instructions on the new form:

(a) The order of numbers used to indicate the rank of officers on board has been reversed to coincide with the BuPers system.

Under the new arrangement the number 5 indicates the rank of lieutenant (jg) instead of captain; other rank numbers are changed accordingly.

(b) The relative amount of time during past 6 months devoted in the categories listed is to be indicated by decimal fractions (tenths) on the line opposite each officer's name.

(c) Degree of officer's qualifications in each category is to be indicated as follows:

Double asterisk (**) - exceptionally outstanding.
Single asterisk (*) - above average.
No asterisk - average.

4. The foregoing data on each officer's experience and qualifications is entered every 6 months on his control card filed in the Dental Personnel Office of

(Not Restricted)

Enclosure (A)

SEMI-ANNUAL DENTAL OFFICER PERSONNEL REPORT

NAVMED-785 (REV. 10/45)

The information requested herein will enable full utilization of dental officer's qualifications by assignment according to current requirements of dental activities. The Senior Dental Officer of each activity will submit original only (typewritten) via official channels on 1 July and 1 January to Bureau of Medicine & Surgery, Navy Dept., Wash. 25, D. C.

NAME OF ACTIVITY	NAME OF DISTRICT OR AREA COMMAND	FOR PERIOD ENDING *(Date)*

ACTIVITY FUNCTION - Using 1.0 (one) to mean the full time services of one dental officer, indicate present distribution of total officers' services in below categories. Indicate actual requirements in same manner. Pertinent comments may be made under "Remarks" on reverse side.

	ADMINISTR'N & SUPERVISION	DIAGNOSIS & EXAMINING	OPERATIVE	STOMATOLOGY	GENERAL ANESTHESIA	RESEARCH	OTHER	DENTURE	CROWN & BRIDGE	MAXILLO-FACIAL PROSTHESIS	EXODONTIA & MINOR ORAL SURG.	FRACTURES & ORAL SURGERY	MAJOR ORAL SURGERY	PLASTIC SURGERY	TOTAL DENTAL OFFFICERS
(Example)	.8	.5	2.5	1		.2	.5	1	.5		1				8
PRESENT															
REQUIRED															

ROSTER - List alphabetically names of dental officers on board. Indicate RANK by number: 1-Capt., 2-Comdr., 3-Lt.Comdr., 4-Lieut., 5-Lt.(jg). Indicate CLASS by letter: N for USN, R for USNR, S for (S)USNR. If NOT qualified for independent duty enter V in STATUS column.

DUTIES & QUALIFICATIONS - Opposite each name indicate by decimal fractions of one the percentage of time during past period devoted to categories listed. (Figures on each line should total 1.0). Indicate qualifications in each category by double asterisk (**) if exceptionally outstanding, asterisk (*) if above average; no asterisk, therefore, indicates average qualifications. Entries in "ADMINISTRATION", "RESEARCH", and "OTHER" columns should be explained on reverse side.

ROSTER				DUTIES & QUALIFICATIONS													
RANK	CLASS.	DENTAL OFFICERS ATTACHED *List names alphabetically, last name first (capitalized)*	STATUS	ADMINIS-TRATION	OPERATIVE	STOMATOLOGY	GENERAL ANESTHESIA	RESEARCH	OTHER	DENTURE	CROWN & BRIDGE	MAXILLO-FACIAL PROSTHESIS	EXODONTIA & MINOR ORAL SURG.	FRACTURES & ORAL SURGERY	MAJOR ORAL SURGERY	PLASTIC SURGERY
3	N	JONES, John J. *(Example)*		.1	.5	.2**			.1				.1*			
				1	2	3	4	5	6	7	8	9	a	b	c	d

(over)

(Not Restricted)

ROSTER *(continued)*

RANK	CLASS.	DENTAL OFFICERS ATTACHED	STATUS	ADMINISTRATION	OPERATIVE	STOMATOLOGY	GENERAL ANESTHESIA	RESEARCH	OTHER	DENTURE	CROWN & BRIDGE	MAXILLO-FACIAL PROSTHESIS	EXODONTIA & MINOR ORAL SURG.	FRACTURES & ORAL SURGERY	MAJOR ORAL SURGERY	PLASTIC SURGERY
		Use additional sheet if necessary		1	2	3	4	5	6	7	8	9	a	b	c	d

REMARKS

(Signature, Senior Dental Officer)

(P)

(Not Restricted)

the Bureau of Medicine and Surgery and constitutes a most important index in future assignments.

--BuMed. Ross T. McIntire.

* * * * * *

ALNAV 3

(Not Restricted)

Subj: Cocaine in Tonsillectomy, Discontinuance of. BuMed. 2 January 1946

Discontinue use of cocaine in tonsillectomy.

--SecNav. H. Struve Hensel.

* * * * * *